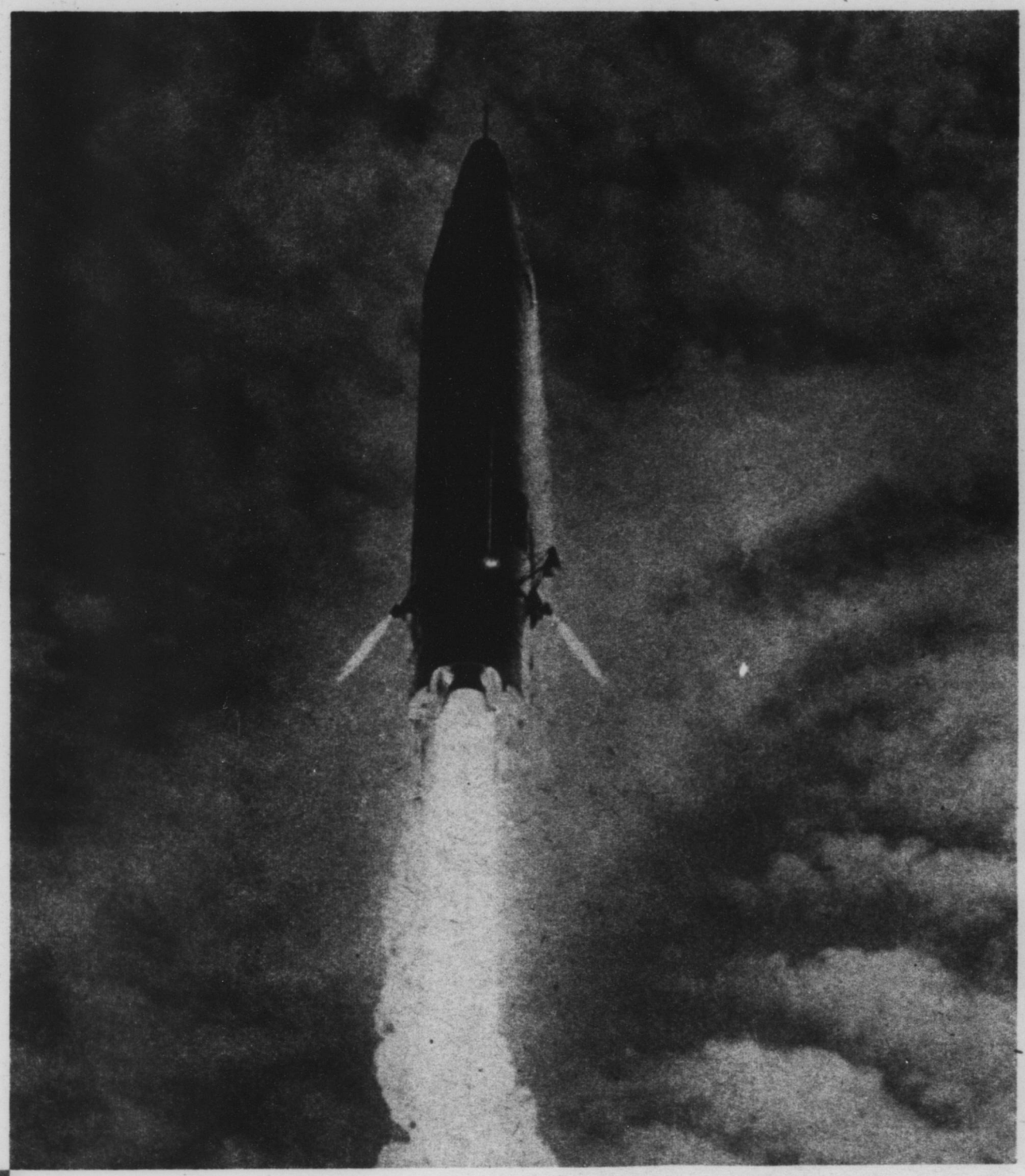
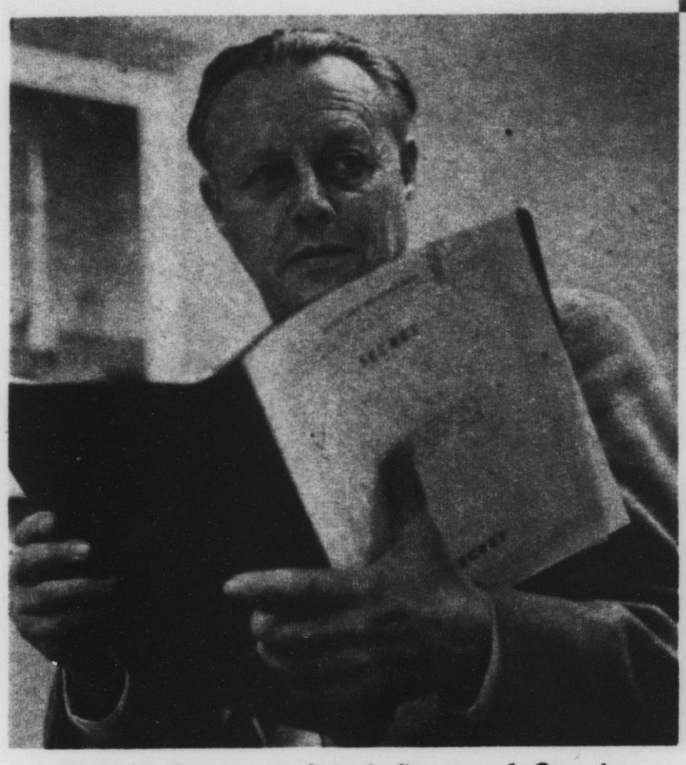
For Missile Mastery

Atlas Is Air Force's Pick For Long-Range Victory



An Air Force Atlas blasts off from a test stand at Cape Canaveral with 370,000 pounds of thrust.



Karel J. Bossart, technical director of Convair-Astronautics, is considered the "father" of the Atlas, having worked on the missile since 1946.

IN THE RACE for missile mastery, the Air Force is putting its long-range bet on the Atlas, the intercontinental ballistic missile designed to carry a nuclear warhead a distance of more than 5,000 miles and drop it on a target with bull's-eye accuracy. The Russians claim they already have such a weapon. American experts doubt it. But with such a threat in mind, scientists and craftsmen responsible for perfecting the Atlas are working under conditions close to wartime emergency. At the Convair Astronautics Co. in San Diego, Calif., home site of the Atlas, all the problems of production are being constantly checked out and reviewed. So sensitive is the whole Atlas program that few pictures have ever been taken of its manufacture or testing. But recently the Air Force and Convair pulled back the security curtain to let photographer Curt Gunther get these glimpses of what is possibly the United States' top-priority project.

An 80-foot monster, 9 feet in diameter and weighing more than a ton for every foot of its length, the Atlas is said to generate 370,000 pounds of thrust (with booster). With plenty of bugs still to be ironed out in the thousands of parts and processes that make the Atlas go, the missile is not yet ready for full combat effectiveness, but several successful firings from the Cape Canaveral launching site indicate this readiness may not be far off.

Unlike new planes which can be test-flown, landed, modified and retested, a missile has only one flight to its name. If it isn't perfect the first time up, it never will be. With a $2 million price tag on each Atlas, there was an additional spur to develop testing methods that would not require firing too many of the "birds" in the long process of development. This gave rise to the test stands at Point Loma and Sycamore Canyon, Calif., where Convair runs each missile through a complete captive test.

Lashed to earth, the Atlas is put through a simulated flight in everything but altitude. Connected by nearly 20,000 electronic contacts to instruments and recording panels, the missile is "fired" and the functions of its

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